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EXECUTIVE SUMMARY

In response to the recession that began in 2007, the U.S. Congress passed, and President Barack Obama signed into law, the American Recovery and Reinvestment Act of 2009 (Pub. Law 111-5). At an estimated cost of \$831 billion, this economic stimulus package sought to save and create jobs, provide temporary relief to those adversely affected by the recession, and invest in education, health, infrastructure, and renewable energy. States and school districts received \$100 billion to secure teachers' jobs and promote innovation in schools. This funding included \$3 billion for School Improvement Grants (SIG), one of the Obama administration's signature programs and one of the largest federal government investments in an education grant program. The SIG program awarded grants to states that agreed to implement one of four school intervention models—transformation, turnaround, restart, or closure—in their lowest-performing schools. Each of the models prescribed specific practices designed to improve student outcomes, including outcomes for high-need students such as English language learners (ELLs) (U.S. Department of Education 2010a).

Given the importance of the SIG program and sizable investment in it, the Institute of Educational Sciences (IES) commissioned this evaluation to focus on four primary questions:

- Did schools implementing a SIG-funded model use the improvement practices promoted by SIG, and how did that compare to use of those practices by schools not implementing a SIG-funded model?
- Did use of SIG-promoted practices include a focus on ELLs, and did that focus on ELLs differ between schools implementing a SIG-funded model and schools not implementing one?
- Did receipt of SIG funding to implement a school intervention model have an impact on outcomes for low-performing schools?
- Was the type of school intervention model implemented related to improvement in outcomes for low-performing schools?

The Every Student Succeeds Act of 2015 (ESSA) made changes to the SIG program that gives states and districts much more flexibility in determining how to turn around their lowest-achieving schools. For example, the U.S. Department of Education (ED) can no longer require the use of particular school intervention models, and funds previously set aside for SIG now flow through the regular Title I formula (Klein 2015). Despite these changes, findings on the first two questions remain useful to policymakers considering the future direction of funds for low-performing schools because they identify practice areas that these schools have and have not yet addressed. Further, findings on the first question provide a useful policy context for interpreting findings on the third question of whether the \$3 billion federal investment had a positive impact on student achievement. For example, if use of the practices promoted by SIG was similar between schools that received grants and schools that did not, then it seems less likely that SIG would have a subsequent impact on student achievement. Findings on the fourth question, which shed light on whether certain models were associated with larger student achievement gains than other models, remain relevant for educators and administrators considering future evidence-based approaches for turning around low-performing schools.

This is the final report for this evaluation of SIG. Three earlier briefs focused on: (1) implementation of three interrelated levers for school improvement—granting low-performing schools operational authority, supporting them, and monitoring their progress (Herman et al. 2014); (2) low-performing schools’ adoption of individual practices and combinations of practices promoted by SIG (Herrmann et al. 2015); and (3) states’ capacity to support school turnaround (Tanenbaum et al. 2015). An earlier report covered all major topic areas that SIG promoted, examining the extent to which schools implementing a SIG-funded model and schools not implementing one reported using these practices in spring 2012, and whether use differed across these two groups of schools (Dragoset et al. 2015). This final report builds on the earlier briefs and report by including an additional year of data (spring 2013) and by examining whether receipt of SIG funding had an impact on student outcomes.

Key findings

SIG allowed grantees to implement one of four school intervention models (transformation, turnaround, restart, or closure). These models promoted the use of many improvement practices in four main areas: (1) adopting comprehensive instructional reform strategies, (2) developing and increasing teacher and principal effectiveness, (3) increasing learning time and creating community-oriented schools, and (4) having operational flexibility and receiving support. It is worth knowing to what extent schools implementing these models with SIG funds (referred to as SIG-funded models throughout this report) actually used these practices, and how that compares to other schools. We examined the use of these SIG-promoted practices in two ways: (1) we conducted a descriptive analysis that compared use of these practices for 290 schools that implemented a SIG-funded model in 2012–2013 and 190 schools that did not, and (2) we used a regression discontinuity design (RDD) with data from 460 schools to examine whether implementation of a SIG-funded model in 2010–2011 had an impact on use of these practices.

We also examined whether the SIG program had an impact on student outcomes. We used an RDD to calculate the overall impact of implementing any of the four SIG-funded models on test scores, high school graduation, and college enrollment. A sample of 190 schools eligible for SIG and 270 schools that were not eligible for SIG was used in the analysis.

Finally, we examined whether certain intervention models were associated with larger student achievement gains than other models. We conducted a correlational analysis that examined the relationship between the type of model implemented and changes in student achievement over time. A sample of 270 schools that implemented a SIG-funded model in 2010–2011 was used in the analysis.

Key findings included:

- **Although schools implementing SIG-funded models reported using more SIG-promoted practices than other schools, we found no evidence that SIG caused those schools to implement more practices.** Our descriptive analysis found that schools implementing a SIG-funded model used significantly more SIG-promoted practices than other schools (22.8 of the 35 practices examined [65 percent] versus 20.3 practices [58 percent], a difference of 2.5 practices). Our more rigorous RDD analysis found a similar

difference of 3.3 practices, but it was not statistically significant. Therefore, we are unable to conclude that SIG *caused* the observed difference in use of practices.

- **Across all study schools, use of SIG-promoted practices was highest in comprehensive instructional reform strategies and lowest in operational flexibility and support.** In the comprehensive instructional reform strategies area, study schools reported using, on average, 7.1 of the 8 SIG-promoted practices examined (89 percent). In the operational flexibility and support area, study schools reported using, on average, 0.87 of the 2 SIG-promoted practices examined (43 percent).
- **There were no significant differences in use of English Language Learner (ELL)-focused practices between schools implementing a SIG-funded model and other schools.**
- **Overall, across all grades, we found that implementing any SIG-funded model had no significant impacts on math or reading test scores, high school graduation, or college enrollment.**
- **When we compared student achievement gains from different models in elementary grades (2nd through 5th), we found no evidence that one model was associated with larger gains than another. For higher grades (6th through 12th), the turnaround model was associated with larger student achievement gains in math than the transformation model.** However, factors other than the SIG model implemented, such as baseline differences between schools implementing different models, may explain these differences in achievement gains.

Background

The SIG program aimed to support the implementation of school intervention models in low-performing schools. Although SIG was first authorized in 2001, this evaluation focused on SIG awards granted in 2010, when roughly \$3.5 billion in SIG awards were made to 50 states and the District of Columbia, \$3 billion of which came from the American Recovery and Reinvestment Act of 2009. States identified the low-performing schools eligible for SIG based on criteria specified by ED and then held competitions for local education agencies seeking funding to help turn around eligible schools.

For the 2010 SIG competition, ED required states to categorize schools into three eligibility tiers based on the school's level (elementary or secondary), Title I status,¹ and achievement or graduation rate. These tiers helped prioritize the distribution of SIG funds at the local level and determined the practices to be used for school turnaround. In general, SIG eligibility Tiers I and II included schools with the lowest achievement and most persistent achievement problems in each state.

¹ Title I, Part A (Title I) of the Elementary and Secondary Education Act provides financial assistance to local educational agencies and schools with many children from low-income families. A school receiving Title I funds that fails to meet adequate yearly progress targets can be assigned a Title I status of "in need of improvement, corrective action, or restructuring."

ED required that each SIG-awarded school under Tier I or Tier II implement one of four school intervention models. These models required specific practices:

- **Transformation.** This model required schools to replace the principal, adopt a teacher and principal evaluation system that accounted for student achievement growth as a significant factor, adopt a new governance structure, institute comprehensive instructional reforms, increase learning time, create community-oriented schools, and have operational flexibility.
- **Turnaround.** This model required schools to replace the principal, replace at least 50 percent of the school staff, institute comprehensive instructional reforms, increase learning time, create community-oriented schools, and have operational flexibility.
- **Restart.** This model required schools to convert to a charter school or close and reopen under the management of a charter management organization or education management organization.
- **School closure.** This model required districts to close schools and enroll their students in higher-achieving schools within the district.

These required practices can be grouped into the four main topic areas promoted by SIG. Table ES.1 lists these four broad areas and the objectives promoted by SIG within each. For example, replacing the principal falls under the “identifying and rewarding effective teachers and principals and removing ineffective ones” objective within the “developing and increasing teacher and principal effectiveness” topic area. The objectives listed in the table cover all practices promoted by SIG, which different models designated as either required or permissible. For example, adopting a teacher and principal evaluation system that accounted for student achievement growth was required under the transformation model but permissible under the turnaround and restart models. For detailed information about the practices that each model required, see Appendix F, Table F.1.

We did not limit our examination to the specific practices required by each model. We instead focused on all required or permissible practices under the transformation or turnaround models because (a) both models prescribed a large set of overlapping practices, (b) restart model schools could choose to use any of those practices, and (c) an earlier report from this study (Herrmann et al. 2014) already presented findings on the implementation of required practices by schools using different models.

Table ES.1. SIG objectives, by topic area

Implementing comprehensive instructional reform strategies
Using Data to Identify and Implement an Instructional Program
Promoting the Continuous Use of Student Data
Conducting Periodic Reviews to Ensure that the Curriculum is Being Implemented with Fidelity
Implementing a New School Model (Such As an Academy with a Theme Focused on Science, Technology, Engineering and Math)
Providing Supports and Professional Development to Staff to Assist ELL Students and Students with Disabilities
Using and Integrating Technology-Based Supports
Tailoring Strategies for Secondary Schools

Developing and increasing teacher and principal effectiveness

Using Rigorous, Transparent, and Equitable Evaluation Systems
 Identifying and Rewarding Effective Teachers and Principals and Removing Ineffective Ones
 Providing High-Quality, Job-Embedded Professional Development or Supports
 Implementing Strategies to Recruit, Place, and Retain Staff

Increasing learning time and creating community-oriented schools

Using Schedules and Strategies That Provide Increased Learning Time or Increasing the Number of Hours per Year That School Was in Session
 Engaging Families and Communities and Providing a Safe School Environment That Meets Students' Social, Emotional, and Health Needs

Having operational flexibility and receiving support

Having Primary Responsibility for Budget, Hiring, Discipline, or School Year Length Decisions
 Receiving Technical Assistance and Support

Source: SIG application.

ELL = English language learner.

Research questions and study design

Including the four primary research questions listed earlier (and italicized below), this report was guided by a total of seven research questions in three broad areas:

Use of SIG-promoted practices

1. *Did schools implementing a SIG-funded model use the improvement practices promoted by SIG, and how did that compare to use of those practices by schools not implementing a SIG-funded model?*
2. Did receipt of SIG funding to implement a school intervention model have an impact on the number of SIG-promoted practices used by low-performing schools?
3. Did schools' use of SIG-promoted practices change over time?
4. *Did use of SIG-promoted practices include a focus on ELLs, and did that focus on ELLs differ between schools implementing a SIG-funded model and schools not implementing one?*
5. Did use of these ELL-focused improvement practices differ based on the prevalence of ELL students in the school or the achievement gap between ELL and other students?

Whether SIG-funded intervention models improved student outcomes

6. *Did receipt of SIG funding to implement a school intervention model have an impact on outcomes for low-performing schools?*

Whether the type of model was related to improvements in student outcomes

7. *Was the type of school intervention model implemented related to improvement in outcomes for low-performing schools?*

Here we describe the study sample, the data collected, and the methods we used to analyze the data. The sample for the SIG evaluation included 22 states and approximately 60 districts.

Data on the use of SIG-promoted practices came from surveys of approximately 480 school administrators conducted in spring 2012 and spring 2013. Data on student outcomes came from student-level administrative data obtained from states and districts. We analyzed the implementation of SIG through both a descriptive analysis (that compared survey responses from 290 schools that implemented SIG-funded models in 2012–2013 to 190 schools that did not) and a more rigorous RDD analysis (that compared survey responses from 190 schools eligible for SIG funds in 2010–2011 to 270 schools that were not eligible for SIG). We examined the overall impact of implementing any of the four SIG-funded models using an RDD analysis that compared test score data from the 190 schools that met the SIG eligibility criteria to the 270 schools that missed the cutoff for eligibility. We used a descriptive, correlational analysis of 270 schools that implemented a SIG-funded model in 2010–2011 to examine whether certain intervention models appeared more effective than others at improving student achievement.

Prior to receiving a grant, SIG-funded model schools had baseline characteristics similar to those of other study schools

Interpreting the differences between schools that implemented a SIG-funded model and schools that did not requires understanding the characteristics of these two groups of schools at baseline (during the 2009–2010 school year, which was prior to SIG funding receipt).

- **Schools that implemented a SIG-funded model and schools that did not had similar observable characteristics prior to receipt of the 2010 SIG awards.**² These included several student and school demographic characteristics, such as race/ethnicity, percentage of students eligible for free or reduced-price lunch, Title I eligibility, location, and school level (elementary, middle, high school).
- **Study schools implementing a SIG-funded model were generally not representative of all U.S. schools implementing such models.** The schools in our study that were implementing SIG-funded models were more disadvantaged and more likely to be in an urban area than U.S. schools nationally that were implementing such models. In particular, study schools implementing a SIG-funded model had higher percentages of students eligible for free or reduced-price lunch than U.S. schools nationally implementing such models (83 percent versus 77 percent), and were more likely to be located in an urban area (88 percent versus 58 percent). Because the SIG sample is not representative of schools nationwide, the findings here may not apply to all schools nationally.

Detailed findings

Schools implementing SIG-funded models reported using more SIG-promoted practices than other schools, but we found no evidence that SIG *caused* those schools to implement more practices

We examined whether implementing a SIG-funded model was associated with using more SIG-promoted practices. This is an important first step in understanding the extent to which the SIG program might improve student achievement. If schools implementing a SIG-funded model

² The baseline characteristics examined came from the Common Core of Data. To limit respondent burden, the school administrator surveys focused primarily on practices schools were using in spring 2012 and spring 2013.

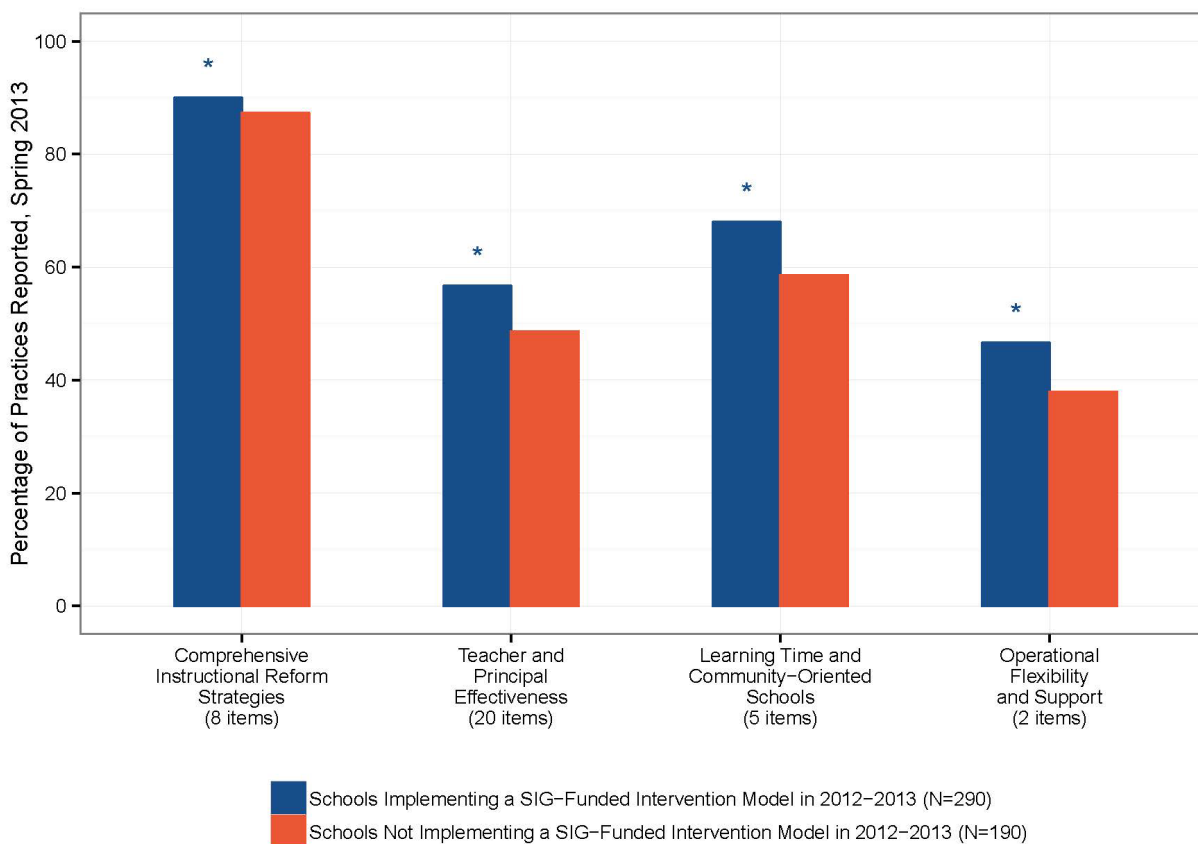
used the same practices as similar schools that did not implement a SIG-funded model, it is less likely that any changes in outcomes for SIG schools—positive or negative—could be attributed to the program.

Using a descriptive analysis, we found that in spring 2013, schools that implemented a SIG-funded model reported using more practices, on average, than schools that did not in the following areas (Figure ES.1):

- Comprehensive instructional reform strategies (90 percent of practices reported by SIG-funded model schools compared to 87 percent for schools not implementing such models)
- Teacher and principal effectiveness (57 percent of practices reported by SIG-funded model schools compared to 49 percent for schools not implementing such models)
- Learning time and community-oriented schools (68 percent of practices reported by SIG-funded model schools compared to 59 percent for schools not implementing such models)
- Operational flexibility and support (47 percent of practices reported by SIG-funded model schools compared to 38 percent for schools not implementing such models)

Adding up the differences across the four areas, schools implementing a SIG-funded model reported using more SIG-promoted practices overall (65 percent of the 35 practices examined, or 22.8 practices) than schools not implementing one (58 percent of the 35 practices examined, or 20.3 practices), a difference of 7 percentage points (2.5 practices). It is not clear whether a difference of this size would be meaningful in its overall influence on improvement practices and school outcomes.

The spring 2013 findings presented in this report were generally the same as the spring 2012 findings presented in an earlier report from this evaluation (Dragoset et al. 2015).

Figure ES.1. Use of practices promoted by SIG, by topic area

Source: Surveys of school administrators in spring 2013.

Note: The total number of practices (shown in parentheses below each bar) differed by topic area. This figure reads as follows (using the first bar on the left as an example): schools implementing a SIG-funded model reported using 90 percent of the practices in the comprehensive instructional reform strategies area.

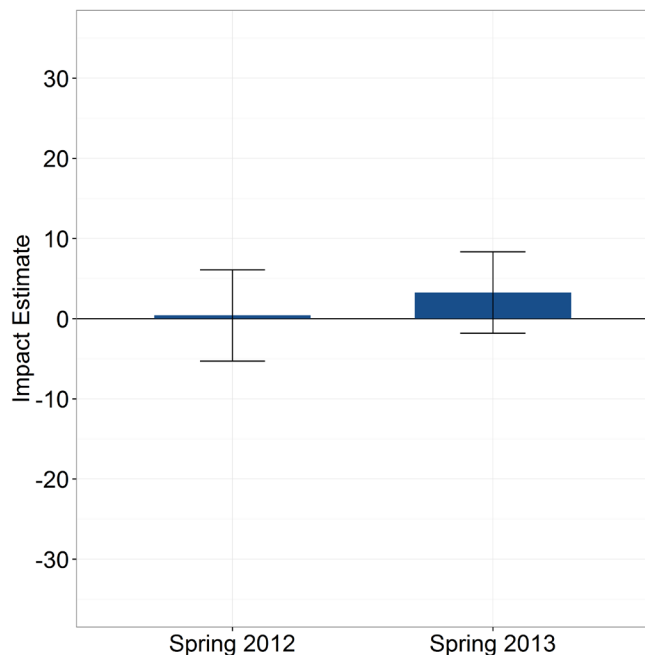
*Significantly different from schools not implementing a SIG-funded model in 2012–2013 at the 0.05 level, two-tailed test.

In addition to the descriptive analysis just described, we also used a more rigorous RDD analysis to examine whether implementing a SIG-funded model had an impact on schools' use of practices. For schools near the SIG eligibility cutoff, we found that the implementation of a SIG-funded model had no significant impact on the total number of SIG-promoted practices used by schools in either spring 2012 or spring 2013 (Figure ES.2). The differences between schools that just met the SIG eligibility criteria and those that just missed the criteria were 0.4 practices (1 percentage point) in spring 2012 and 3.3 practices (9 percentage points) in spring 2013. Although these differences were similar in size to the differences we observed in the descriptive analysis (particularly for 2013), they were not statistically significant. One likely reason why these differences were statistically significant in the descriptive analysis but not in the RDD analysis is that the RDD analysis was less able than the descriptive analysis to detect differences in the number of practices used.³ Therefore, although our analyses show that schools implementing

³ The minimum detectable differences for the RDD analysis were 5.8 practices in spring 2012 and 5.2 practices in spring 2013. In contrast, the minimum detectable difference was 0.8 practices in spring 2013 for the descriptive analysis presented in this report.

SIG-funded models used more SIG-promoted practices than other schools, we are unable to conclude that SIG *caused* those observed differences.

Figure ES.2. Impacts of SIG-funded models on number of SIG-promoted practices used



Source: State and district administrative records; surveys of school administrators in spring 2012 and 2013.

Note: Units are the number of practices used, out of 35 practices examined. Black lines show 95 percent confidence intervals. This figure reads as follows (using the first bar on the left as an example): in spring 2012, schools that implemented a SIG-funded model used 0.4 more practices than schools that did not implement such a model, but this difference was not statistically significant. The results shown in this figure were calculated using the RDD methods described in Chapter II and Appendix A.

Across all study schools, use of SIG-promoted practices was highest in the comprehensive instructional reform strategies area and lowest in the operational flexibility and support area

Use of SIG-promoted practices was highest in the comprehensive instructional reform strategies area, in which schools reported using, on average, 7.1 of the 8 SIG-promoted practices examined (89 percent). Use of SIG-promoted policies and practices was lowest in the operational flexibility and support area. In that area, schools reported using, on average, 0.87 of the 2 SIG-promoted practices examined (43 percent).

Across all topic areas, the use of individual practices varied widely. Nearly all study schools reported using benchmark or interim assessments at least once per year (a practice in the comprehensive instructional reform strategies area). In contrast, very few study schools reported (1) using teacher evaluation results to inform decisions about compensation, (2) using principal evaluation results to inform decisions about compensation, or (3) using financial incentives to recruit and retain effective principals (practices in the teacher and principal effectiveness topic area).

In three of four areas, changes over time in use of SIG-promoted practices did not significantly differ between schools implementing a SIG-funded model and schools not implementing one

In three areas—comprehensive instructional reform strategies, teacher and principal effectiveness, and operational flexibility and support—there were no differences between the two groups of schools with respect to changes over time in practices used. In the fourth area—learning time and community-oriented schools—the schools implementing a SIG-funded model reported a decrease of 14 percent of practices between 2011–2012 and 2012–2013, compared to a decrease of 4 percent for schools not implementing such a model.

There were no significant differences in use of ELL-focused practices promoted by SIG between schools implementing a SIG-funded model and schools not implementing one

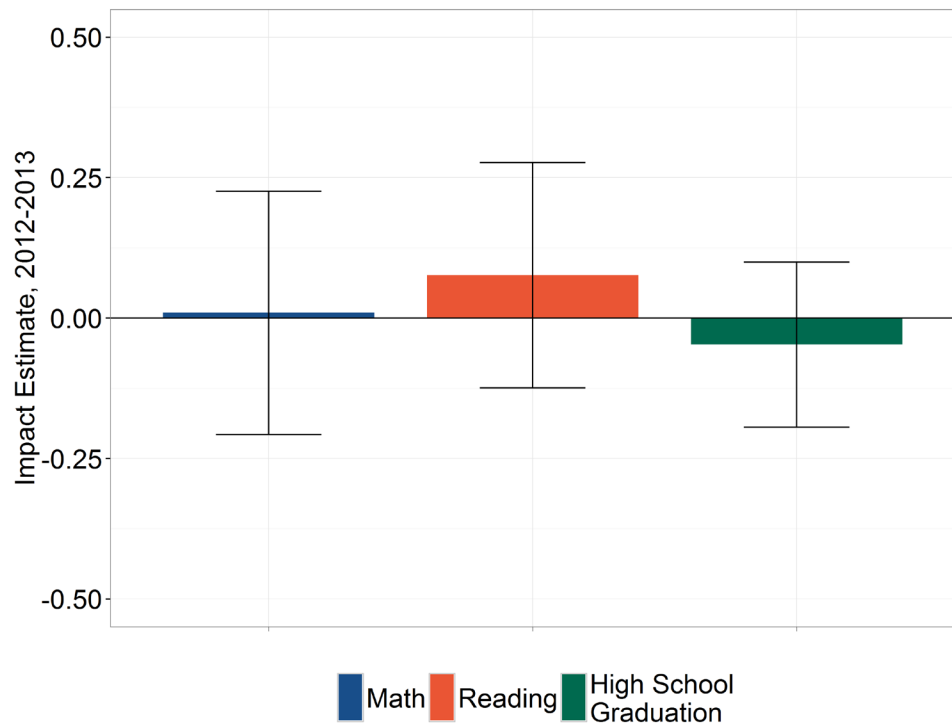
Both groups of schools (those implementing a SIG-funded model and those not implementing one) reported using 52 percent of the ELL-focused practices examined.

Use of ELL-focused practices did not differ based on the prevalence of ELL students in the school, but SIG-funded model schools with higher ELL achievement gaps used these practices more than schools with lower gaps

The differences in use of ELL-focused practices between schools with higher and lower ELL populations were not significant (0.4 practices among schools implementing a SIG-funded model and 0.3 practices among schools not implementing one). However, among schools implementing a SIG-funded model, schools with higher ELL achievement gaps reported using significantly more ELL-focused practices than schools with lower ELL achievement gaps (0.3 more practices).

SIG-funded models had no significant impact on test scores, high school graduation, or college enrollment

We found no effect of SIG-funded models on student outcomes for schools near the SIG eligibility cutoff. When we examined the impacts of SIG-funded models on math and reading test scores, high school graduation, and college enrollment for 2010–2011, 2011–2012, and 2012–2013, we found no significant impacts (Figure ES.3 shows results for 2012–2013; Appendix A presents results for earlier years [2010–2011 and 2011–2012]). For 2012–2013, the impact on math test scores was 0.01 standard deviations, the impact on reading test scores was 0.08 standard deviations, and the impact on high school graduation was -5 percentage points. We were unable to calculate an impact on college enrollment for 2012–2013 due to insufficient sample sizes, but we found no significant impacts on college enrollment for the other two school years (the impacts for 2010–2011 and 2011–2012 were -11 and 2 percentage points). For all of these student outcomes, we found no significant impacts within student and school subgroups.

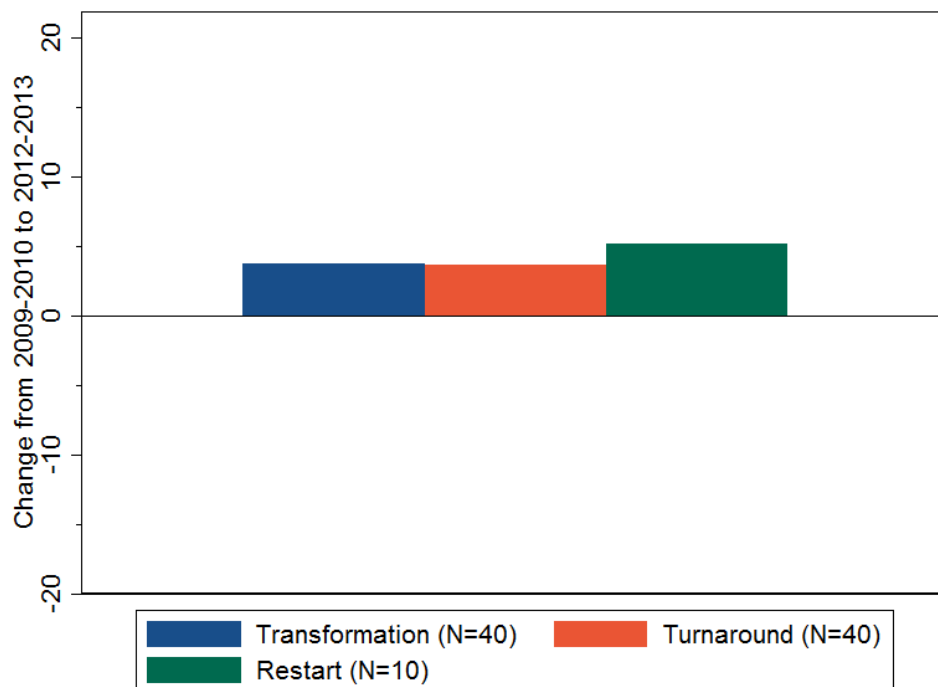
Figure ES.3. Impacts of SIG-funded models on student outcomes

Source: State and district administrative records.

Note: Units for test scores are effect sizes (test scores were standardized to have a standard deviation of 1). Units for high school graduation are percentage points/100. For example, an impact of 0.1 indicates an increase of 10 percentage points. Black bars show 95 percent confidence intervals. The results shown in this figure were calculated using the RDD methods described in Chapter II and Appendix A.

In elementary grades, there was no evidence that one model was associated with larger student achievement gains than another

For elementary grades (2nd through 5th), we found no evidence that one intervention model was associated with larger student achievement gains than another. Between 2009–2010 (the year prior to SIG implementation) and 2012–2013, there were no significant differences in math or reading gains between schools implementing different models (Figure ES.4 presents math results; see Appendix B for reading results). This finding was also true for the two other outcome years we examined (2010–2011 and 2011–2012) and across all sensitivity analyses (see Appendix B).

Figure ES.4. Changes in math test scores in elementary grades, by model

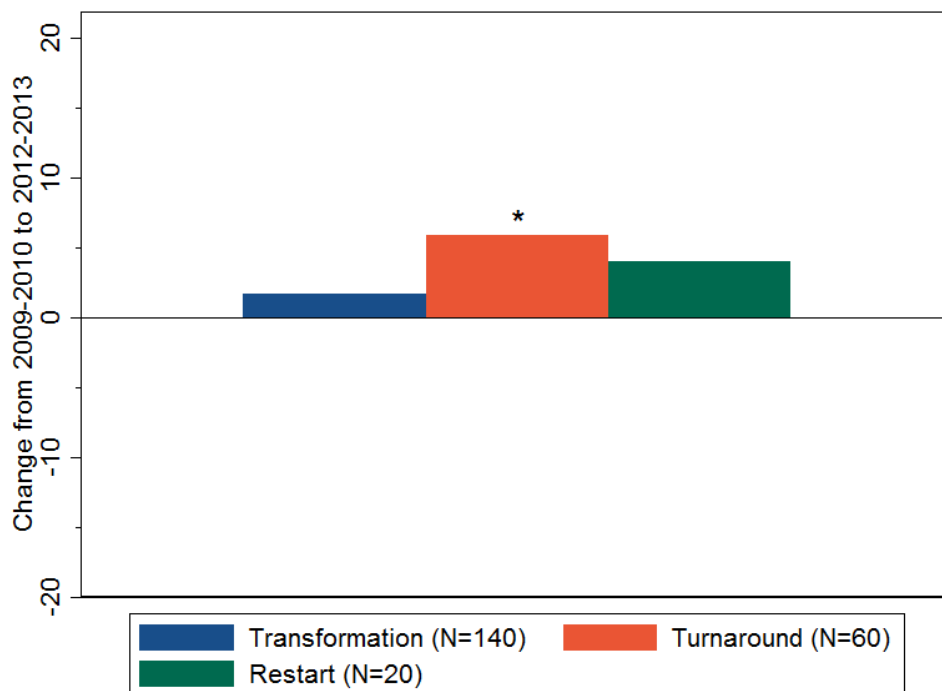
Source: State administrative data.

Notes: This figure depicts regression-adjusted changes in math test scores between the baseline year (2009–2010) and 2012–2013 in grades 2 through 5. Changes in math test scores were regression-adjusted for state and grade using a linear model. The key finding (that no model was associated with larger student achievement gains than another) remained the same when we calculated changes in math test scores in a way that accounted for student mobility. Units are normal curve equivalents (NCEs). The NCEs reported in this figure correspond to the following effect sizes (ESs): transformation ES = 0.18, turnaround ES = 0.17, restart ES = 0.25. There were no statistically significant differences between schools implementing different models.

In higher grades, the turnaround model was associated with larger student achievement gains in math than the transformation model

For higher grades (6th through 12th), the implementation of the turnaround model was associated with larger student achievement gains than the transformation model. In particular, between 2009–2010 and 2012–2013, turnaround schools experienced larger gains in math than transformation schools (Figure ES.5 shows math results; see Appendix B for reading results).

However, factors other than the SIG model implemented, such as baseline differences between schools implementing different models, may explain these differences in achievement gains. In particular, turnaround schools served more economically disadvantaged and lower-achieving students at baseline than transformation schools. This finding suggests that turnaround schools may have been fundamentally different from transformation schools prior to SIG, meaning that any number of explanations (other than the model implemented) could account for the different achievement gains.

Figure ES.5. Changes in math test scores in higher grades, by model

Source: State administrative data.

Notes: This figure depicts regression-adjusted changes in math test scores between the baseline year (2009–2010) and 2012–2013 in grades 6 through 12, using changes calculated in a way that accounted for student mobility. Changes in math test scores were regression-adjusted for state and grade using a linear model. When we calculated changes in math test scores in a way that did not account for student mobility, we found that both the turnaround and restart models were associated with larger student achievement gains than the transformation model. Units are normal curve equivalents (NCEs). The NCEs reported in this figure correspond to the following effect sizes (ESs): transformation ES = 0.08, turnaround ES = 0.28, restart ES = 0.19.

*Significantly different from transformation model.

Conclusions

The findings in this report suggest that the SIG program did not have an impact on the use of practices promoted by the program or on student outcomes (including math or reading test scores, high school graduation, or college enrollment), at least for schools near the SIG eligibility cutoff. In higher grades (6th through 12th), the turnaround model was associated with larger student achievement gains in math than the transformation model. However, factors other than the SIG model implemented, such as unobserved differences between schools implementing different models, may explain these differences in achievement gains.

These findings have broader relevance beyond the SIG program. In particular, the school improvement practices promoted by SIG were also promoted in the Race to the Top program. In addition, some of the SIG-promoted practices focused on teacher evaluation and compensation policies that were also a focus of Teacher Incentive Fund grants. All three of these programs involved large investments to support the use of practices with the goal of improving student outcomes. The findings presented in this report do not lend much support for the SIG program

having achieved this goal, as the program did not appear to have had an impact on the practices used by schools or on student outcomes, at least for schools near the SIG eligibility cutoff.

However, it is important to keep in mind that our impact estimates only apply to schools near the SIG eligibility cutoff. They correspond to what might be expected if a policy change slightly shifted the cutoff for SIG eligibility, slightly increasing or decreasing the number of schools eligible for SIG funds. We cannot say whether SIG had an impact on use of practices or student outcomes for schools far away from the cutoff.

